My Challenge and How I Solved It

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groundwater week

Pushing the limits

Solutions with multiple pump systems

Solving Drilling Challenges

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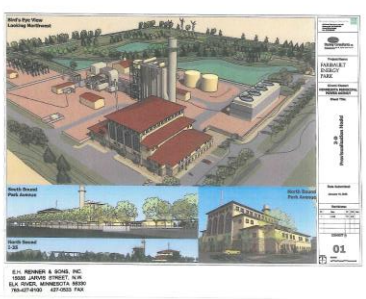

PROBLEM

- Peak power plant needs 1,350 gpm for fuel oil power generation plant:
  - 2700 hp motor needs cooling water during operation
  - Complete back up system needed in the event of pump failure.
  - 2nd well 29ft away from first well. Never use both together.

SOLUTION

- Drill only one 24" x 18" well to produce 1,500gpm and install two 1,350gpm pumps with 100hp motors in same water well.
- Use dual pump Wesley Tool.
- One VFD controller for each well pump and one backup VFD on auto switch gear in event of failure of backup.

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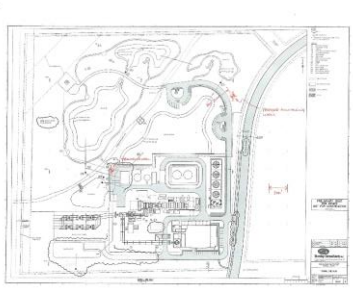
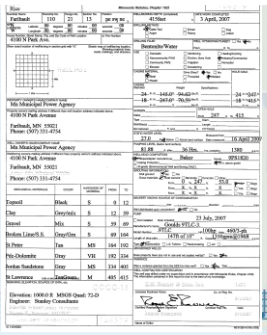
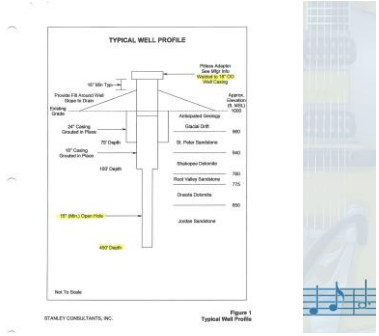
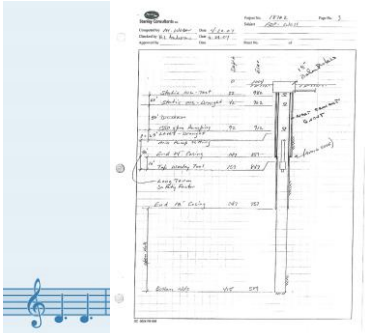


Well record

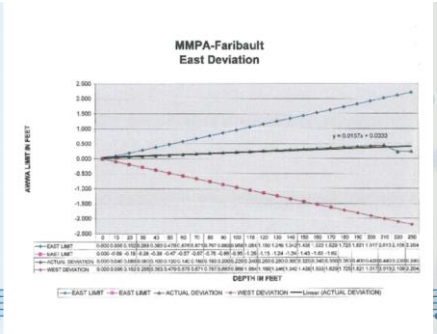


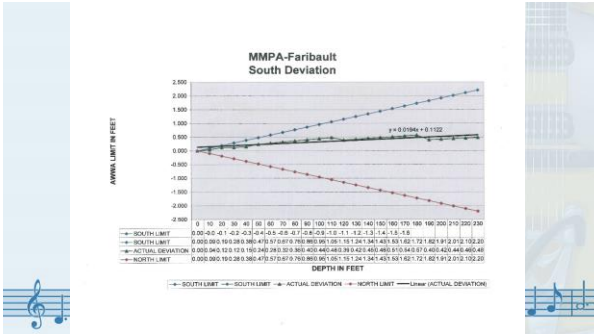
Well Profile

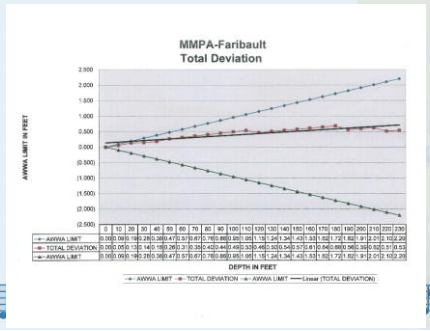


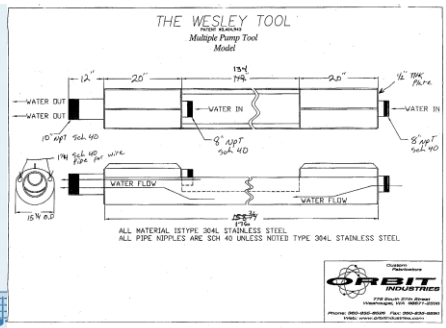


As built drawing









Upper 1350 gpm pump & 100hp motor

	SUCTION MODEL NUMBER	MINIMUM WELL INSIDE DIAMETER	TOOL DIAMETER	MAXIMUM DROP PIPE SIZE **	UPPER PUMP MAXIMUM DIAMETER	MAX UPPER NIPPLE FOR UPPER PUMP	MAX LOWER NIPPLE **	MAXIMUM LONGEST PIPE SIZE	UPPER HEAD LENGTH	LOWER HEAD LENGTH	STANDARD UPPER OPENING	MAX CLEARANCE FOR PUMP AND MOTOR	OVERALL TOOL BODY LENGTH	EXTENDED UPPER OPENING	MAX CLEARANCE FOR PUMP AND MOTOR	OVERALL TOOL BODY LENGTH
6-72 OR 6-120	6	6 1/2	2	3 3/4	5	2	3/4	14	10	72	66	96	120	114	144
6a-72 OR 6a-120	6	7 1/2	4	5 3/4	5	4	3/4	14	10	72	66	96	120	114	144
8-72 OR 8-120	8	7 1/2	4	5 3/4	5	4	3/4	14	10	72	66	96	120	114	144
10-72 OR 10-144	10	9 1/2	6	5 3/4	6	6	3/4	20	16	72	66	108	144	138	180
12-96 OR 12-144	12	11	8	7 3/4	8	8	1	20	16	96	90	132	144	138	180

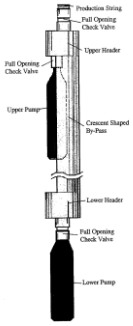
ALL DIMENSIONS ARE IN INCHES

** LARGER DROP PIPES AND BOTTOM NIPPLES ARE AVAILABLE, BUT LEAVE NO ROOM FOR ELECTRICAL WIRES.

Dual pump specifications

Provides for:

10" NPT upper discharge male thread
8" NIP lower discharge male thread
1-1/4 opening for sub cable
176-3/4" overall length
15-3/4" max O.D. tool
All type 304L stainless steel design
Nipple discharge are schedule 40, 304L stainless
Both pumps are Gould 1350gpm @ 196ft total head
Both motors are 100hp 460/60/3
One set of 10" dia. Steel drop pipe, 156ft setting
Two sets of sub-cables.
Two identical VFD controllers {30days on 30days off}
Baker Standard 9PS1820WBWE010M10 pitless unit.



In-Control

Alternating dual ABB VFD controllers

Digital flow meter for each pump

Ready for shipment to site.

Upper 100hp 2-pole motor

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Upper pump check valve

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Dual pump supply

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The advantages of using the Wesley Tool for the MMPA site are as follow:

a. Provides immediate backup-standby pump capability
b. Design and operation features require minimal maintenance costs.
c. Eliminates high cost of a second well
d. Eliminates cost of a second Baker Monitor pitless unit and drop pipe
e. Eliminates the additional cost of second set of discharge piping.
f. Eliminates the additional cost of two wells drilled less than 50 ft apart.
   a. Additional re-development of first well
   b. Removal and reinstallation of pump & motor
g. Eliminates down time the first well is in production while the second well is drilled, grouted, developed and test pumped.
h. Allows time to (order & deliver) replacement pump or motor
i. Allows time to bring in replacement pump & motor without stocking stand-by pumping equipment.
j. Maintenance on pumping equipment requires only one pump pull.
k. Maintenance on well is reduce by 50% with only one well.

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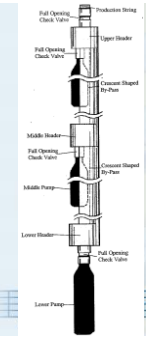
# of pumps is unlimited

PUSHING THE LIMITS
Think out of the box!



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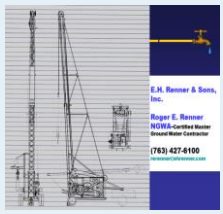

Questions?

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